

Pollution Incident Response Management Plan (PIRMP)
Karuah Hard Rock Quarry

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Pollution Incident Response Management Plan (PIRMP)

Karuah Hard Rock Quarry

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TESTING OF THE PRIMP HISTORY

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1 INTRODUCTION

1.1 Background to the PIRMP

The *Protection of the Environment Legislation Amendment Act 2011* (POELA Act) introduces several changes to improve the way pollution incidents are reported, managed and communicated to the general community. The Act includes a new requirement under Part 5.7A of the Protection of the Environment Operations Act 1997 (POEO Act) to prepare, keep, test and implement a pollution incident response management plan (PIRMP).

The objectives of these PIRMPs are to:

- Ensure comprehensive and timely communication about a pollution incident to staff at the premises, the Environment Protection Authority (EPA), other relevant authorities specified in the Act (such as local councils, NSW Ministry of Health, WorkCover NSW, and Fire and Rescue NSW) and people outside the facility who may be affected by the impacts of the pollution incident.
- Minimise and control the risk of a pollution incident at the facility by requiring identification of risks and the development of planned actions to minimise and manage those risks.
- Ensure that the PIRMP is properly implemented by trained staff, identifying persons responsible for implementing it, and ensuring that the PIRMP is regularly tested for accuracy, currency and suitability.

1.2 Background to Karuah Hard Rock Quarry

Hunter Quarries Pty Limited (HQPL) has operated the Karuah Hard Rock Quarry (the Quarry) at Karuah since 2002 following purchase of the site from Mountain Industries. The resource extracted is a hard blue rock known as “andecite” which has a variety of uses including road base material, construction aggregate, aggregate used in concrete batching, drainage works, fill, landscaping and various other uses.

The Quarry is located adjacent to the Karuah Red Quarry and Pacific Highway, approximately 4kms north of the township of Karuah, and is contained wholly within the Great Lakes Local Government Area. The existing quarry operation consists of an open cut excavation, crushing and processing facilities, stockpiles, loading facilities, workshop area and a weigh bridge. The Quarry produces up to 500,000 tonnes of product per year.

On 03 December 1997 Great Lakes Council (GLC) granted conditional development consent for the hard rock quarry and crushing plant. On 03 June 2005, Development Consent DA265-10-2004 was granted by the then Department of Planning (DoP) approving the Quarry’s proposed expansion. This expansion included implementing the remainder of the approved Stage 1 quarry operation, extending the quarry operations into the Stage 2 area, upgrading and using existing infrastructure on site and rehabilitating the site by re-contouring and revegetating exposed surfaces.

The current quarrying operations involve progressive drilling and blasting, which is followed by crushing and screening to produce the required materials. Some weathered material is extracted by ripping, eliminating the need for blasting. The quarry currently produces a range of crushed natural rock product for use in landscaping, local road making and construction projects. The quarry currently employs 20 staff as well as a number of contractors as required to assist with maintenance activities. Quarrying activities are allowed from 7am to 6pm Monday to Friday and from 7am to 1pm on Saturday. Maintenance activities are allowed 7 days a week between 7am to 6pm.

Once blasted, rock material is loaded onto haul trucks by excavator from the pit area and hauled to the crushing plant for processing. Once processed, front end loaders load processed product from the stockpile area onto trucks for transport off site.

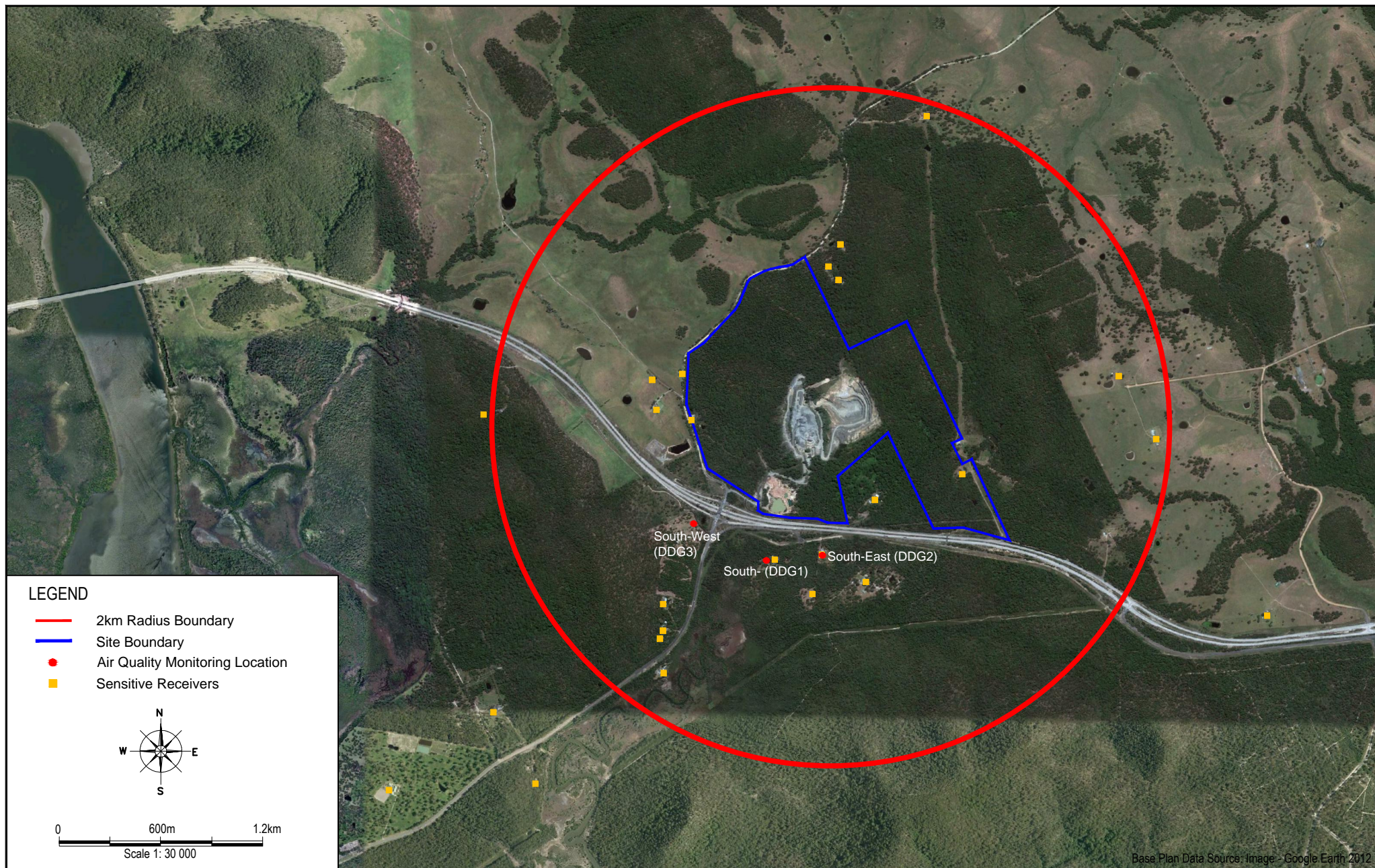
The Quarry has an Environmental Protection Licence (EPL 11569), which covers the premises. The EPL outlines specific conditions for environmental monitoring and reporting.

Figures have been prepared as per the requirements of the PIRMP Guidelines. **Figure 1** outlines the Quarry and its surrounding environment. **Figure 2** outlines the site in more detail, providing the location of licensed discharge points, chemical storage areas and refuelling area.

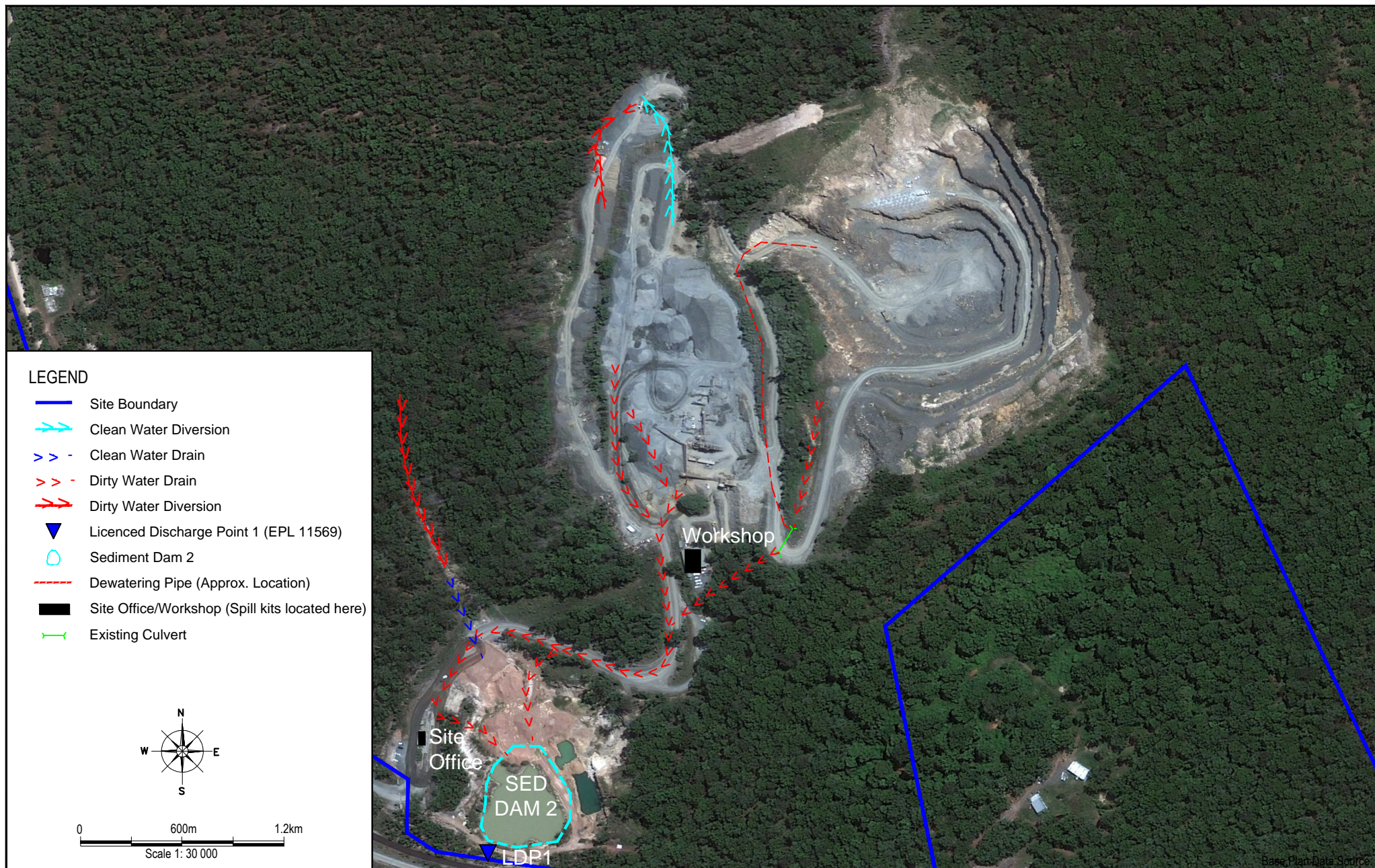
1.3 Key Aspects of the PIRMP

This PIRMP covers the key actions to minimise the occurrence of a pollution incident and manage a pollution incident if one occurs (during and after a pollution incident). The PIRMP does not have procedures for the treatment of injured persons or the remediation of the environment following a pollution incident.

The PIRMP has been prepared for managing the impact to human health (employees and nearby neighbours) and the environment (onsite and offsite).



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2 REQUIREMENT TO PREPARE THE PIRMP

2.1 Legislative Requirement

The specific requirements for PIRMPs are set out in *Part 5.7A* of the *Protection of the Environment Operations Act 1997* (POEO Act) and the *Protection of the Environment Operations (General) Regulation 2009* (POEO(G) Regulation). In summary, this provision requires the following:

- All holders of environment protection licences must prepare a PIRMP (*section 153A, POEO Act*).
- The PIRMP must include the information detailed in the *POEO Act (section 153C)* and be in the form required by the *POEO(G) Regulation (clause 98B)*.
- Licensees must keep the PIRMP at the premises to which the environment protection licence relates or, in the case of trackable waste transporters and mobile plant, where the relevant activity takes place (*section 153D, POEO Act*).
- Licensees must test the PIRMP in accordance with the *POEO(G) Regulation (clause 98E)*.
- If a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened, licensees must immediately implement the PIRMP (*section 153F, POEO Act*).

Holders of an existing environment protection licence will need to prepare and be able to implement a PIRMP by 1 September 2012.

2.2 Structure of the PIRMP

Table 1 outlines the structure of the PIRMP, as per the requirements of the POEO (G) Regulation.

Table 1 Requirement to Prepare a PIRMP

Clause Number	Requirement	Section in PIRMP
98 C (1) (a)	A description of the hazards to human health or the environment associated with the activity to which the licence relates (the relevant activity),	Section 5 Appendix 1
98 C (1) (b)	The likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood,	Section 5 Appendix 1
98 C (1) (c)	Details of the pre-emptive action to be taken to minimise or prevent any risk of harm to human health or the environment arising out of the relevant activity,	Section 9.1 Appendix 1
98 C (1) (d)	An inventory of potential pollutants on the premises or used in carrying out the relevant activity,	Section 6
98 C (1) (e)	The maximum quantity of any pollutant that is likely to be stored or held at particular locations (including underground tanks) at or on the premises to which the licence relates,	Section 6
98 C (1) (f)	A description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident,	Section 7
98 C (1) (g)	The names, positions and 24-hour contact details of those key individuals who: (i) are responsible for activating the plan, and (ii) are authorised to notify relevant authorities under section 148 of the Act, and (iii) are responsible for managing the response to a pollution incident,	Section 10.1
98 C (1) (h)	The contact details of each relevant authority referred to in section 148 of the Act,	Section 10.2

98 C (1) (i)	Details of the mechanisms for providing early warnings and regular updates to the owners and occupiers of premises in the vicinity of the premises to which the licence relates or where the scheduled activity is carried on,	Section 9.1
98 C (1) (j)	The arrangements for minimising the risk of harm to any persons who are on the premises or who are present where the scheduled activity is being carried on,	Section 8
98 C (1) (k)	A detailed map (or set of maps) showing the location of the premises to which the licence relates, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of any stormwater drains on the premises,	Figures 1 and 2
98 C (1) (l)	A detailed description of how any identified risk of harm to human health will be reduced, including (as a minimum) by means of early warnings, updates and the action to be taken during or immediately after a pollution incident to reduce that risk,	Section 9 Appendix 1
98 C (1) (m)	The nature and objectives of any staff training program in relation to the plan,	Section 12
98 C (1) (n)	The dates on which the plan has been tested and the name of the person who carried out the test,	Section 14
98 C (1) (o)	The dates on which the plan is updated,	After table of contents
98 C (1) (p)	The manner in which the plan is to be tested and maintained.	Section 14

Clause 98 B (2) of the POEO (G) Regulation states that the PIRMP can form part of another statutory document. This PIRMP forms part of the Karuah Hard Rock Quarry EMS.

3 DEFINITION OF A POLLUTION INCIDENT

The POEO Act 1997 defines a pollution incident as:

“pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise”.

A licensee is required to notify the relevant regulatory authorities of a pollution incident if there is a risk of ‘material harm to the environment’, which is defined in section 147 of the POEO Act as:

(a) *harm to the environment is material if:*

- (i) *it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
- (ii) *it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and*

(b) *loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.*

4 IMMEDIATE NOTIFICATION OF POLLUTION INCIDENT

Licensees will now be required to report pollution incidents "*immediately*" instead of "*as soon as practicable*" (section 148 POEO Act). This means that licensees need to report pollution incidents without delay.

Licensees must notify all relevant authorities about the incidents. These include:

- Environment Protection Authority (EPA);
- Ministry of Health;
- WorkCover Authority;
- Great Lakes Council; and
- Fire and Rescue NSW.

5 DESCRIPTION AND LIKELIHOOD OF HAZARDS AND PRE-EMPTIVE ACTIONS

This section has been prepared to meet the requirements of clause 98C (1) (a), (b) and (c) of the *POEO(G) Regulation*.

A pollution incident risk assessment for the Quarry (**Appendix 1**) has been prepared to:

- Describe the hazards to human health and the environment;
- Describe the likelihood of any such hazards occurring;
- Outline existing controls to prevent pollution incidents occurring; and
- Outline key pollution response measures.

6 INVENTORY OF POTENTIAL POLLUTANTS

Table 2 outlines the potential pollutants (chemicals) stored onsite at the Quarry.

Table 2 Inventory of Chemicals at the Karuah Hard Rock Quarry

Product Name	Location/s of where product is stored	Estimated Maximum Quantity	Available (Y/N)
Diesel Fuel	Workshop/Stores	28000L	Y
Oil and Lubricant	Workshop/Stores	1000L	Y
Grease	Workshop/Stores	60L	Y
Hydraulic Oil	Workshop/Stores	1000L	Y

7 INVENTORY OF SAFETY EQUIPMENT FOR POLLUTION RESPONSE

Table 3 outlines the safety equipment kept on site.

Table 3 Inventory of Safety Equipment for Pollution Response

Product Name	Location/s of where equipment is stored	Total Quantity	Calibration/Maintenance Requirement
Fire Extinguisher	Various	Approximately 60	Inspected regularly
Spill Kit	Office and workshop	4	Inspected regularly
PPE	Issued to all staff Office and workshop	-	Inspected regularly
MSDS's	Office	-	Inspected regularly
First AID Kit	Various locations including vehicles	Numerous	Inspected regularly
Safety Signage	Various locations	-	Inspected regularly

If required in the case of a fire, sediment dam 2 can be used as a water source.

8 MINIMISING HARM TO PERSONS ON THE PREMISES

All staff and contractors are to be inducted on the PIRMP requirements before completing any work on site.

Minimising the impact to persons at the Quarry during a pollution incident must be the highest priority.

In the event that a pollution incident requires the evacuation of the site, actions will be completed in accordance with the site Evacuation Procedure. All staff are informed on the location of muster locations through site inductions, signage and ongoing training. As part of the preparation of the PIRMP, the key aspects of the PIRMP will be provided to staff and contractors.

9 ACTIONS TO BE TAKEN BEFORE, DURING OR IMMEDIATELY AFTER A POLLUTION INCIDENT

9.1 Actions to Minimise a Pollution Incident

The Pollution Risk Assessment (**Appendix 1**) outlines potential pollution incidents at the Quarry. For each potential pollution risk, there are a number of controls outlined. Some general controls which are in place to reduce the likelihood a pollution incident occurring include:

- Site Environmental and Safety Management Plans;
- Regular inspections and maintenance;
- Environmental monitoring;
- Correct storage and waste management; and
- Training and awareness.

The site will make all attempts to ensure pollution incidents do not occur.

The site makes all attempts to prevent pollution incidents; but in a situation where a pollution incident is imminent and may potentially cause detrimental impacts to human health or the environment, the site will contact the necessary stakeholders (employees, contractors, neighbours, Appropriate Regulatory Authorities (ARA's)) to provide as much early warning as possible.

9.2 Actions During a Pollution Incident

If an evacuation is required, this shall be completed in accordance with **Section 8**.

Appendix 1 outlines the following specific actions. General actions for different potential pollution incidents are outlined below:

Surface Water

- Assess the situation;
- Contact the ARA's in accordance with the PIRMP;
- If safe and possible to do so, undertake immediate measures that prevent further damage, such as repair of erosion and sediment control structures, flocculating sediment basins, deployment of spill containment equipment and intercepting the substance from entering surface water body;
- Seek immediate assistance from specialist environmental consultants (if required);
- Regularly monitor flow rate and water quality parameters during discharge as per requirements of the EPL;
- Take direction from the ARA's as required; and
- Complete incident investigation and send report to relevant ARA's.

Groundwater

- Visually assess upon discovery of groundwater contamination;
- Contact the ARA's in accordance with the PIRMP;
- Undertake immediate measures that will reduce further damage;
- Seek immediate assistance from specialist environmental consultants;
- Take direction from the ARA's as required; and
- Complete incident investigation and send report to relevant ARA's.

Air Quality

- Visually assess the situation;
- Undertake emergency response if safe to do so;
- Activate emergency evacuation procedures;
- Contact and take direction from the ARA's;
- Activate sprinkler system and deploy water carts to irrigate stockpiles and exposed surfaces; and
- Complete incident investigation and send report to relevant ARA's.

Noise

- Upon receipt of noise complaint, handle and manage complaint in accordance with the complaints procedure;
- Immediately investigate noise levels recorded by noise monitoring equipment to determine the source of noise at time of incident;
- Review operation activities to determine if noise can be reduced;
- Ensure all operation activities are only undertaken during approved operating hours; and
- Report in AEMR.

Lighting/Visual

- Upon receipt of light /visual complaint, handle investigation and response actions in accordance with the complaints handling procedure; and
- Immediately review light equipment and control/orientate lighting appropriately so that impact on sensitive receivers is reduced or prevented. Review potential to screen operations.

Licensees are required to report pollution incidents “immediately” (without delay) to the ARA's listed in **Section 10**.

In the event of a pollution incident, the person who has identified the incident should immediately contact the Quarry Manager. The person reporting the pollution incident should provide the following key details:

- Their name and contact details;
- Location of the pollution incident/emergency;
- Nature of the pollution incident/emergency; and
- Details of any assistance required.

The details of any emergency call will be recorded. Incidents are to be recorded using the Incident Report Form (**Appendix 2**).

9.3 Actions Following a Pollution Incident

If a pollution incident occurs, there will be a detailed incident investigation and a report will be sent to the relevant ARA's. The Incident Report Form (**Appendix 2**) will be completed. If the Quarry was notified of the pollution incident by the public then the complaint will be logged as per the Complaint Form (**Appendix 3**) and the Incident Report Form will also be completed. Call contracted environmental officer for advice on incident management and reporting.

Within a month following a pollution incident, the PIRMP will be reviewed and tested. The Quarry will continue to liaise with the relevant ARA's to reduce the likelihood of the pollution incident occurring.

All staff and contractors will receive the necessary refresher training, and the key outcomes of the incident investigation will be reported to staff and contractors.

10 CONTACT DETAILS

This section has been prepared to meet the requirements of clause 98C (1) (l) of the *POEO(G) Regulation*.

10.1 Details for those Managing the Response

The following quarry personnel outlined in **Table 4** are responsible for reporting the environmental incidents.

Table 4 Quarry Contact Details

Key Contact	Position	Contact Details
Mr Alex Bador	Quarry Manager	*

* Whilst personal contact details for the following are available in the Controlled on site Pollution Incident Response Management Plans they do not appear in this public document under provision of the Privacy and Personal Information Protection Act 1998.

10.2 Details for Appropriate Relevant Authorities

This section has been prepared to meet the requirements of clause 98C (1) h of the *POEO(G) Regulation*. The following table (**Table 5**) outlines the contact details for the appropriate regulatory authorities (ARA's) for reporting pollution incidents from the Karuah Hard Rock Quarry.

Table 5 Contact Details for ARA's

ARA	Key Contact	Contact Details
NSW Office of Environment and Heritage Sub department: Environment Protection Authority	<i>This will result in the incident being recorded and the appropriate person being contacted</i>	131 555
NSW Ministry of Health	Hunter New England Local Health District, New Lambton	(02) 4921 3000
WorkCover	Incident Notification Hotline (Response Management Team)	131 050
Local Authority (Council)	Great Lakes Council Front Desk	(02) 6591 7222
Fire and Rescue & Police	Hotline	1300 729 579

10.3 Details for Surrounding Receptors

Table 6 provides contact details for surrounding receptors.

Table 6 Surrounding Receptors

Receptor	Key Contact
Wedgerock	*
Resident 1	*
Resident 2	*
Resident 3	*
Resident 4	*
Resident 5	*
Resident 6	*
Resident 7	*

** Whilst personal contact details for the following are available in the Controlled on site Pollution Incident Response Management Plans they do not appear in this public document under provision of the Privacy and Personal Information Protection Act 1998.*

11 COMMUNICATION WITH NEIGHBOURS AND THE LOCAL COMMUNITY

In the event of a pollution incident, the Quarry has the following processes for contacting the community:

- When an incident occurs, the Quarry will immediately contact the five ARA's listed in **Table 5**.
- The Quarry will consult with these ARA's to determine if the community is to be notified of the pollution incident. The Quarry will discuss with the ARA's regarding the most relevant communication strategy (eg. media release, direct contact with those potentially impacted).
- Contact with the community to be then completed as per the agreed communication strategy.
- The results of the investigation of any pollution incident from the Quarry are to be made publicly available within 14 days of obtaining the data. The Quarry does not maintain a website, therefore this information will be made available upon request.

12 STAFF TRAINING

This section has been prepared to meet the requirements of clause 98C (1) (m) of the *POEO(G) Regulation*.

The requirements of the PIRMP will be outlined in the site induction for all new employees and contractors. A toolbox talk outlining the key components on the PIRMP will be presented to all quarry staff and contractors in 2012. The objective of training will be to ensure all staff and contractors are aware of the key steps to manage a pollution incident. If a pollution incident occurs, refresher training will be delivered to staff and contractors.

13 AVAILABILITY OF THE PIRMP

A copy of the PIRMP (electronic and hard copy) is to be kept at the premises. The Quarry will provide the NSW OEH (EPA) a copy upon request.

14 TESTING OF THE PIRMP

The PIRMP will be tested every twelve months as per the requirement of the *POEO(G) Regulation*. The testing of the PIRMP is to be carried out in such a manner as to ensure that the information included in the PIRMP is accurate and up to date, and that each PIRMP is capable of being implemented in a workable and effective manner.

Testing will involve undertaking desktop simulations of incidents and if necessary completing exercises or drills. Testing will need to cover all the components of the PIRMP, including the effectiveness of training.

The PIRMP must also be tested within one month of any pollution incident occurring in the course of an activity to which a licence relates to assess, in the light of that incident, whether the information included in the PIRMP is accurate and up to date, and the PIRMP is still capable of being implemented in a workable and effective manner.

15 REFERENCES

NSW Office of Environment and Heritage, Environmental Protection Licence (EPL) 11569.

Environmental Protection Authority 2012, Guideline for the Preparation of Pollution Incident Response Management Plans.

GSSE, 2012, Environmental Management Strategy, Hard Rock Quarry, Karuah, NSW.

Hunter Quarries 2012, Annual Environmental Management Report (AEMR) for the Karuah Hard Rock Quarry, Karuah, NSW. AEMR Period – 1 August 2010 – 15 January 2012.

Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012.

APPENDIX 1

POLLUTION RISK ASSESSMENT FOR KARUAH HARD ROCK QUARRY

								Version:- A Date:- xx					
Risk Category	Risk Ref. Number	Potential Hazard / Risk (Impact)	Relevance to Project	Inherent				Existing Controls / Management Response	Pollution Response Measures	Comments / Notes	Responsibility	By When	Completed Date
				C	L	5E	Rating						
Surface Water	001	Discharge during heavy rainfall causing erosion and sedimentation causing impact to human health.	Low risk of discharge of sediment laden water causing impact to human health	5	E	5E	25 (L)	1. Erosion and sediment control structures. Runoff drains to Sediment Dam 2. 2. Progressive rehabilitation of disused areas of site. 3. Surface water monitoring. 4. Inspections. 5. Ability to pump water.	1. Assess the situation. 2. Contact the ARA's in accordance with the PIRMP. 3. If safe and possible to do so, undertake immediate measures that prevent further damage, such as repair of erosion and sediment control structures, flocculating sediment basins. 4. Regularly monitor flow rate and water quality parameters during discharge as per requirements of the EPL. 5. Take direction from the ARA's as required. 6. Complete incident investigation and send report to relevant ARA's.				
	002	Discharge during heavy rainfall causing erosion and sedimentation impact to the environment.	Relevant as potential impacts from erosion and sedimentation could occur on site. Sediment Dam 2 may discharge into adjacent creek line.	4	C	4C	18 (L)						
	003	Contamination of surface water by hydrocarbons causing impact to human health	Relevant as hydrocarbons and chemicals are used on site and a spill of such liquids (in a large enough volume) could contaminate surface water. A bulk fuel storage is located on site that could potentially leak/spill. Contaminated surface water could migrate offsite and come become exposed to humans.	4	D	4D	21 (L)	1. Housekeeping standards including: Prestart checks. Routine maintenance and repair of machinery and plant. 2. Emergency spill kits located on site. 3. Emergency cutoffs on fuel truck. 4 . Report to workshop. Report findings to staff. 5. Routine surface water monitoring. 6. Training and awareness on use of spill kits. 7. Secondary bund container around bulk fuel storage.	1. Visually assess the situation. 2. Contact the ARAs in accordance with the PIRMP. 3. If safe and possible to do so, undertake immediate measures that prevent further damage, such as deployment of spill containment equipment and intercepting the substance from entering surface water body. 4. Seek immediate assistance from specialist environmental consultants. 5. Take direction from the ARA's as required. 6. Complete incident investigation and send report to relevant ARA's.				
	004	Contamination of surface water by hydrocarbons causing impact to the environment	Relevant as hydrocarbons and chemicals are used on site and a spill of such liquids (in a large enough volume) could contaminate surface water. A bulk fuel storage is located on site that could potentially leak/spill. Contaminated surface water could affect the health of surface aquatic or terrestrial organisms/ecosystems.	4	D	4D	21 (L)						
	005	Washdown water causing impact to human health	Relevant as the oil water seperator at the washdown bay could fail/overflow.	5	D	5D	24 (L)	1. Washdown bay and collection sump. 2. Oily water seperator connected to the workshop. 3. Use of a licensed liquid waste disposal contractor to pump out collection sumps and traps. 4. Checking level of sumps and traps during inspections. 5. Hydrocarbon testing in Rowan's Dam.	1. Visually assess the situation. 2. Contact the ARA's. 3. Undertake immediate measures, where possible, that prevent further damage, such as deployment of spill containment equipment. 4. Seek immediate assistance from a specialist environmental consultant. 5. Take direction from the ARA's as required. 6. Complete incident investigation and send report to relevant ARA's.				
	006	Washdown water causing impact to the environment		5	D	5D	24 (L)						
Groundwater	007	Contamination of groundwater by hydrocarbons causing impact to human health	Relevant as hydrocarbons and chemicals are used on site and a spill of such substances (in a large enough volume) could contaminate groundwater. A bulk fuel storage is located on site that could potentially leak/spill.	4	D	4D	21 (L)	1. Housekeeping standards including: Prestart checks. Routine maintenance and repair of machinery and plant. 2. Emergency spill kits located on site. 3. Emergency cutoffs on fuel truck. 4. Report to workshop. Report findings to staff. 5. Routine groundwater monitoring. 6. Training and awareness on use of spill kits. 7. Secondary bund container around bulk fuel storage.	1. Visually assess upon discovery of groundwater contamination. 2. Contact the ARA's in accordance with the PIRMP. 3. Undertake immediate measures that will reduce further damage (e.g. deployment of spill containment equipment). 4. Seek immediate assistance from specialist environmental consultants. 5. Take direction from the ARA's as required. 6. Complete incident investigation and send report to relevant ARA's.				
	008	Contamination of groundwater by hydrocarbons causing impact to the environment	Relevant as hydrocarbons (including diesel) and chemicals are used on site and a spill of such substances (in a large enough volume) could contaminate groundwater. A bulk fuel storage is located on site that could potentially leak/spill. Contaminated groundwater could affect the health of any groundwater dependant ecosystems or surface aquatic or terrestrial ecosystems.	4	D	4D	21 (L)						
	009	Smoke (due to onsite fire) causing impact to human health	Relevant as smoke could affect human health due to smoke inhalation. Area surrounded by bush.	4	D	4D	21 (L)	1. Bushfire Management Plan. 2. Rural Fire Services Survey. 3. Emergency evacuation procedures. 4. Fire/Smoke detection systems in admin building and workshop.	1. Visually assess the situation. 2. Undertake emergency response if safe to do so. 3. Activate emergency evacuation procedures. 4. Contact and take direction from the ARA's (first contact Fire Dept).				
	010	Smoke (due to onsite fire) causing impact to the environment	Relevant as smoke could affect air quality. Fire could occur onsite.	5	E	5E	25 (L)	5. Fire extinguishing equipment located on site.	5. Complete incident investigation and send report to relevant ARA's.				

Risk Category	Risk Ref. Number	Potential Hazard / Risk (Impact)	Relevance to Project	Inherent				Existing Controls / Management Response	Pollution Response Measures	Comments / Notes	Responsibility	By When	Completed Date
				C	L	Rating							
Air Quality	011	Noxious gas released to atmosphere (wet holes) by blasting causing impact to human health	Relevant as noxious gases could affect human health if inhaled. Potential safety risk on site.	NA					1. Blasting procedures. 2. Holes not wet (avoid rainfall ingress).	1. Emergency Procedure. 2. Blasting Management Plan.			
	012	Noxious gas released to atmosphere (wet holes) by blasting causing impact to the environment	Low relevance, little blasting completed.	NA					3. Contact workcover if there is a risk to human health on site.				
	013	Dust emissions from site causing impact to human health	Relevant as dust is produced by drilling, blasting, excavation, hauling, in pit crusher, conveyor, waste emplacement, reshaping and topsoil spreading; and could affect human health due to dust inhalation.	5	E	5E	25	(L)	1. No further clearing of vegetation. 2. Meteorological Station located on site that measures wind speed and direction.	1. Visually assess the situation.			
	014	Dust emissions from site causing impact to the environment	Not relevant as dust monitoring has demonstrated that dust is not an issue.						4. Dust control procedure. 5. Competent trained operators. 6. Supervision. 7. Sprinkler system in crushing area. 8. Dust monitoring and approved dust criteria. 9. Blasting as per Blast Management Plan.	2. Activate emergency evacuation procedures. 3. Contact the ARA's. 4. Stop/Shut down all dust producing activities. 5. Activate sprinkler system and deploy water carts to irrigate stockpiles and exposed surfaces.			
Waste	015	Incorrect handling, use, storage and/or disposal of hazardous/toxic waste causing impact to human health.	Relevant because of potential for humans to come into contact with hazardous/toxic substances. Workshop area waste includes oily rags, oil filters, kitty litter, absorbent booms, redundant chemicals.	5	E	5E	25	(L)	1. No access of the site to the public. 2. Contract with licensed waste contractor.		Unlikely that a pollution incident would occur that meets the definition of a pollution incident.		
	016	Incorrect handling, use, storage and/or disposal of hazardous/toxic waste causing impact to the environment.	Relevant as hazardous/toxic substances could leak/spill into the environment rubbish could be blown off site. Workshop Area waste includes oily rags, oil filters, kitty litter, absorbent booms, redundant chemicals.	4	D	4D	21	(L)	3. Waste tracking and reporting waste streams. 4. Segregated receptacles. 5. Training & awareness.				
Noise	017	Noise emissions from site causing impact to human health	Not relevant as noise emissions are not defined as a pollution incident by the EPA.						1. Operating hours as approved by consent conditions. 2. Complaints handling procedure. 3. Plant and machinery maintenance. 4. Blast Management Plan. 5. Noise monitoring.	1. Upon receipt of noise complaint, handle and manage complaint in accordance with the complaints procedure. 2. Immediately investigate noise levels recorded by noise monitoring equipment to determine the source of noise at time of incident. 3. Review operation activities to determine if noise can be reduced. 4. Ensure all operation activities are only undertaken during approved operating hours.			
	018	Noise emissions from site causing impact to the environment	Not relevant as noise emissions are not defined as a pollution incident by the EPA.						Nil Required.	Nil Required.			
Lighting/ visual	019	Light/visual from site causing impact to human health	Not relevant as light emissions are not defined as a pollution incident by the EPA.						1. Only operate during approved operating hours.	1. Upon receipt of light /visual complaint, handle investigation and response actions in accordance with the complaints handling procedure. 2. Immediately review light equipment and control/orientate lighting appropriately so that impact on sensitive receivers is reduced or prevented. Review potential to screen operations.			
	020	Light/visual from site causing impact to the environment	Not relevant as light emissions are not defined as a pollution incident by the EPA.						Nil required.	Nil Required			

APPENDIX 2

INCIDENT REPORT FORM

Detailed Notes:

(Use this space to record all relevant notes in relation to the incident, including detail on conversations with all persons notified and/or witnesses to the event, both internally and externally to Karuah Quarry)



ENVIRONMENTAL INCIDENT FORM:

(1) Incident Summary:

- a. Date/Time incident noted (if different to when occurred):/...../...Time:am / pm
- b. Date/Time incident occurred (estimate if unknown):/...../..... Time:..... .am /pm
(known / estimated)
- c. Duration of incident (estimate if unknown): mins/hours/ days
- d. Incident noted/recorded by:..... At am /pm .
- e. Quarry Management notified by:.....
on (date):.....At time:.....am/pm
- f. Management to complete: Was the scale of the incident considered large enough to potentially cause environmental impact, especially offsite?Yes / No (if yes, see external notifications)
- g. Has an external complaint also been received regarding the incident? Yes / No
o If yes, provide date & details of Complaint Record Form:

(2) Incident Details:

- a. Type of Incident (eg spill, failure etc):
- b. Material(s) / Potential Pollutant(s) (type & concentration):
- c. Quantity of Material(s) Involved/Released (kg/L/m³ etc):
- d. Location of Incident (describe here & mark on map over page):
(include GPS coordinates if known)

(3) Notifications:

- a. Internal - Karuah Quarry & Contractors:

<input type="checkbox"/> Quarry Management	<input type="checkbox"/> Contractor Management
<input type="checkbox"/> Quarry Operators	<input type="checkbox"/> Contractor Operators
<input type="checkbox"/> Quarry Staff	<input type="checkbox"/> Other

Date & Details of Corrective Action form:
- b. External Parties Notified (eg DEC(EPA), MSC, DNR, Emergency Services):

Organisation(s): (NB: use opposite page if needed)

Contact Name: Time/Date:am /pm/...../.....

Instructions or comments received:.....

ENVIRONMENTAL INCIDENT FORM:

WHAT: Describe the incident and tick the potentially impacted environments.

Material(s) Types & Concentrations (if known):

Quantity (eg m³, L, tonnes):

Potential Impact to:

☐ Water quality ☐ Air quality (dust / odour) ☐ Soil quality ☐ Flora/Fauna ☐ Other (Specify):

Incident Description (include estimated cause if can provide):

WHERE: Geographically, where does the concern exist? Mark on map if possible.

GPS Coordinates (if available):

Detailed Description of location:

WHEN: When was the problem noticed? (What time, hour/ day / date) When was the first time?
How long has it been a problem? Has this concern been noticed / notified previously?

EXTENT Is the problem getting worse or better? How severe is the problem?

REACTION Details of Corrective Action form for more info

Date & Details of Corrective Action form (incl who issued by):

Karuah Quarry



(Mark the location of the incident on the photo)



CLOSE OUT:

OFFICE USE ONLY – Close Out.			
	Project Manager	Director	Register
Date/Initial			

APPENDIX 3

COMPLAINTS FORM

Additional Notes:



ENVIRONMENTAL COMPLAINTS RECORD FORM:

Complaint Summary: _____

- a. Date that complaint was received:/...../.....
- b. Complaint received by:..... At am /pm .
- c. Method of notification of complaint:

☐ In Person ☐ Telephone ☐ Written ☐ E-mail ☐ Fax

Complainant Details: _____

- a. First Name Surname:
- b. Contact Number:: Phone () Fax ()
- c. Address:
.....

Follow Up Actions: _____

- a. The following have been advised:
- | | |
|--|--|
| <input type="checkbox"/> Quarry Manager | <input type="checkbox"/> Quarry Employees |
| <input type="checkbox"/> Dept Environment & Conservation | <input type="checkbox"/> Great Lakes Council |
| <input type="checkbox"/> Other | |

- b. Complainant Contacted: yes / no by on/...../.....

If no, reason why not:

.....
.....

- c. Further information provided:
.....
.....

- c. Investigation Initiated (description / by)

ENVIRONMENTAL COMPLAINTS RECORD FORM:

WHAT: Describe the complaint. What is its exact nature? Air, noise, water, light, vibration etc.
<div><input type="checkbox"/> Blasting</div> <div><input type="checkbox"/> Noise</div> <div><input type="checkbox"/> Dust</div> <div><input type="checkbox"/> Lighting</div> <div><input type="checkbox"/> Odour</div> <div><input type="checkbox"/> Other (Specify):.....</div>
WHERE: Geographically, where does the concern exist? Mark on map if possible.
WHEN: When was the problem noticed? (What time, hour/ day / date) When was the first time? Have you contacted us about this concern previously?
EXTENT Is the problem getting worse or better? How severe is the problem?

Karuah Hard Rock Quarry

(Mark the location on the photo)

